

ENVIRONMENTAL MONITORING STUDY  
DIVERSEY WYANDOTTE CORPORATION  
SANTA FE SPRINGS, CALIFORNIA

January, 1986

Prepared by:

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LAND AND WATER RESOURCES



J. H. KLEINFELDER & ASSOCIATES

January 23, 1986

Q-1073-1

Diversey Wyandotte Corporation  
8921 Dice Road  
Santa Fe Springs, CA 90670

Attention: Mr. Gary Miller

Dear Mr. Miller:

Attached to this letter is our draft report entitled "Environmental Monitoring Study, Diversey Wyandotte Corporation, Santa Fe Springs, California." The report presents a summary of the field exploration, laboratory testing and analysis prepared during the investigation.

Please review the report at your convenience and provide us with your comments so that they may be incorporated into the final document, where appropriate.

We trust the information presented in the report meets your needs at this time. Should you have any questions regarding the report, please feel free to contact us at your convenience.

Very truly yours,

J. H. KLEINFELDER & ASSOCIATES

*Kenneth L. Durand*  
Kenneth L. Durand  
Staff Hydrogeologist

*Randolph C. Harris*  
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Senior Hydrogeologist

KLD/RCH:gw

Attachment

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ENVIRONMENTAL MONITORING STUDY  
DIVERSEY WYANDOTTE CORPORATION  
SANTA FE SPRINGS, CALIFORNIA

1.0 INTRODUCTION

This report summarizes the work and findings of the environmental investigation at the Diversey Wyandotte Corporation facility in Santa Fe Springs, California. A regional site plan illustrating the facility's location is presented on Plate No. 1. A site specific plan showing the study area is presented on Plate No. 2. The work has been coordinated with Mr. Gary Miller of Diversey Wyandotte Corporation and Mr. Robert Sullivan of Thomsen Engineering, Inc.

The facility has been operating under various names at its present location since 1953. Over 400 products are manufactured on site. The products consist mainly of cleaners and defoamers with 5 percent metal finishing

The purpose of this investigation was to respond to the City of Santa Fe Springs' concern that the site has had an impact on the soil and groundwater beneath the site. These concerns were the result of a Preliminary Assessment prepared by the Department of Health Services in April, 1984.

2.0 AUTHORIZATION

The work on this project was authorized by Purchase Order No. Y28606, dated October 24, 1985.

### 3.0 SCOPE OF WORK

The scope of work on this project is outlined in our proposal dated October, 1984. Specific work scope items included are summarized in the following:

- o Drilling, sampling and logging nine soil test borings to depths between 30 and 78 feet.
- o Completing three of these borings as monitoring wells.
- o Analyzing selected soil samples from each boring.
- o Sampling and analyzing water from each monitoring well.
- o Reviewing relevant literature.
- o Evaluating the collected data.
- o Preparation of a report.

### 4.0 FIELD INVESTIGATION

#### 4.1 Soil Boring/Sampling

A total of nine soil test borings were drilled. The locations are shown on Plate 2 in the Appendix. The borings were drilled by the hollow-stem auger method for the upper 45 feet, then converted to the mud rotary method for the remainder of the hole. The shallow borings were drilled entirely by hollow-stem auger. The augers, drill rod and drill bits were steam-cleaned prior to use and between borings to minimize the potential for cross-contamination. The drilling was performed by Datum Exploration under the observations of a J. H. KLEINFELDER staff geologist who visually logged the borings and classified the soils. The boring logs are presented on Plate Nos. 4 through 12 in the Appendix.

Plate No. 3 illustrates the Unified Soils Classification System used to classify the soils encountered.

Soil samples were collected during the drilling operation at approximately 5-foot intervals in the unsaturated zone and then at stratigraphically significant intervals once groundwater was encountered. A modified Porter Sampler was used to collect samples. Soil samples were collected for both laboratory analysis and for visual classification of soil types. All retained soil samples were collected in brass sampling tubes, sealed with aluminum-lined caps, labeled and delivered to Curtis & Thompkins Laboratory in Los Angeles, California for chemical analysis along with the appropriate Chain of Custody form. Copies of the Chain of Custody forms are included in the Appendix.

#### 4.2 Monitoring Well Construction/Development

Three of the nine test borings were completed as monitoring wells. Wells were constructed with 2-inch diameter, PVC pipe and 0.020-inch, machine-slotted screen. The screened section annulus was packed with clean sand and a bentonite plug was placed above the sand pack. The remaining annulus was cemented from the plug up to the surface. No solvents or glues were used during the well construction. The details of each individual well completion are shown on each respective boring log.

Each well was finished with an aluminum well head box with a moisture and tamper resistant lid. The well head boxes are set 1 to 2 inches above ground level, with a finished cement apron to minimize the potential for entrance of surface fluids.

After installation, the wells were developed with an air lift developing tool equipped with a foot valve to prevent the introduction of air into the formation. The wells were pumped until the water was relatively clear.

#### 4.3 Water Sampling

All wells were measured for static water level prior to sampling. The wells were then purged and sampled using an air-activated, submersible pump (bladder pump) constructed of stainless steel and viton. To minimize the potential for cross-contamination, the pump and teflon sampler line were thoroughly decontaminated before sampling and between wells by the following procedure:

1. Exterior surface of sampling tubes are decontaminated by steam-cleaning during withdrawal from every well.
2. Sample pump is disassembled and the used bladder removed.
3. All pump components are then steam-cleaned and rinsed in distilled water.
4. Pump is reassembled with a new bladder installed.

5. Teflon sampler lines are pressure-washed with 5 to 10 gallons of clean, hot water through direct connection to steam-cleaner.
6. Five gallons of distilled water are then pumped through entire system.

Prior to sample collection, a minimum of five well volumes were purged from the well to collect a representative formation sample. Measurements of pH, conductivity and temperature are taken at frequent intervals during the purge. Stabilization of these values indicate that representative formation fluids are being removed from the well.

#### 4.4 Monitoring Well Elevation

The location and elevation of the monitoring wells were determined by a survey made by Thomsen Engineering, Inc.

Table A presents the approximate well head elevations, depth-to-groundwater and groundwater elevations of the three monitoring wells. Plate 13 is a generalized water level contour map of the uppermost water-bearing zone beneath the site. As illustrated on the map, groundwater flow is to the west-southwest across the site. Regional groundwater flow is to the south-southwest.

TABLE A

WELL NUMBER	WELL HEAD ELEVATION	DEPTH-TO- WATER*	WATER LEVEL ELEVATION
MW-1	El. 148.69	47.73	El. 100.96
MW-2	El. 148.91	48.23	El. 100.68
MW-3	El. 148.52	48.30	El. 100.22

\* Date of Measurement was 12-16-85

#### 5.0 LABORATORY TESTING

Laboratory testing for this project consisted of analyzing 12 soil samples and five water samples. The soils were analyzed for pH, phosphate, chloride, ammonia and EPA priority pollutant metals. The water samples were analyzed for general minerals, inorganic chemicals, phosphates and purgeable halocarbons (EPA method 601).

The testing was performed at the laboratory previously listed in Section 4.1. The results of the laboratory testing are summarized and presented in Tables B through D of the Appendix. Individual test results are included in Appendix A. All analysis was performed by procedures outlined in the 15th Edition of Standard Methods.

#### 6.0 QUALITY CONTROL

To insure the precision and accuracy of the chemical data, the following quality control measures were employed:



1. Duplicate samples
2. Trip blank testing
3. Cross-contamination testing

Duplicate samples were taken at each sampling site. In the case of 40 ml VOA vials, two samples were obtained for each parameter. This insures that if breakage or trouble with the testing equipment occurs, there is a backup sample to test. This also allows a recheck on results if there is an inconsistency of if confirmation of results is necessary.

Trip blank (distilled water) was included by the laboratory to insure quality control during transportation and testing of the samples.

In an effort to insure the precision and accuracy of the data, quality control measures were employed to both minimize and measure cross-contamination.

To minimize cross-contamination between field samplings, the pump and sample lines are purged by the procedure detailed in Section 4.3. The total volume of pump and lines is less than one half gallon. The pumping results in 20 to 26 volumes of clean water being flushed through the system.

All samples were labeled during sampling, refrigerated and shipped to Curtis & Tompkins Laboratory, Los Angeles, California.

A Chain of Custody form was maintained for all samples taken. Copies of these forms are included in Appendix A.

## 7.0 GEOLOGY/HYDROGEOLOGY

### 7.1 Geology

Diversey Wyandotte Corporation's Santa Fe Springs facility is located in Section 31 of Township 2 South, Range 11 West (San Bernardino Base meridian), within the Santa Fe Springs Plain area of the coastal plain of Los Angeles County, California. The Santa Fe Springs Plains is a low, slightly-rolling topographic feature that has been warped by the Santa Fe Springs-Coyote Hills anticlinal system. These plains dip gently both to the northeast toward Whittier and to the southwest toward the Downey Plains, with an elevation difference that ranges between 175 and 200 feet above sea level.

The site is located on upper Pleistocene alluvium of the Lakewood Formation. The Lakewood formation unconformably overlies the lower Pleistocene San Pedro formation, the Pliocene, Pico and Repette formations and the Miocene Puente formation. Beneath the site only the Lakewood and the San Pedro formations contain fresh water bearing units (Plate 14).

### 7.2 Hydrogeology

The site area is located on surface exposure of the Bellflower Aquiclude, a low permeability portion of the Lakewood formation. This late Pleistocene alluvial formation is approximately 12 to 18 feet thick and consists of clays, silts, silty clays and sandy

clays at this location. The Gage Aquifer underlies this and is approximately 15 to 20 feet thick, consisting of fine to medium sands in this area. The literature (2) places the bottom of the Gage Aquifer at approximately 50 feet beneath the surface (Plate 15). It appears from on-site borings that the bottom of the Gage is actually at approximately 25 to 35 feet. All the borings drilled on-site encountered a clay to silty clay layer beneath the Gage. This is most likely the top of the uppermost aquiclude of the San Pedro Formation. This aquiclude is approximately 25 to 35 feet thick and serves to separate the Gage Aquifer from the Jefferson Aquifer. Since the coefficient of permeability and the horizontal and vertical extent of this aquiclude are not well defined, its usefulness as a competent barrier between these two aquifers is presently unknown. The Jefferson Aquifer underlies this aquiclude and is the uppermost aquifer beneath the site. All water samples were obtained from this aquifer. Based on previous studies in the local area by J. H. KLEINFELDER & ASSOCIATES, this aquifer is a confined and has a transmissivity on the order of 40,000 gallons per day per foot beneath the site. Assuming an aquifer thickness of 40 feet and an error factor of 50 percent, a permeability range of 675 to 1,500 gal/day/ft<sup>2</sup> can be expected, with a velocity of between 1.8 and 0.8 ft/day.

The general regional flow of groundwater in the area is to the south to southwest (3, 9). The water levels measured in the monitoring wells indicate a site-specific flow to the west-

southwest. Plate 13 illustrates the approximate water level contours and flow direction based on the data generated during this study.

### 7.3 Beneficial Use of the Shallow Aquifers

The shallow aquifers of the area have been out of use for some time. The Los Angeles County Public Health Service is the approval agency for water supply wells of this area. For many years, they have required the upper 70 to 100 feet of all wells to be both cased and sealed due to shallow contamination and poor water quality. Additionally, they are unaware of any public wells which use the water sources in question. (8)

The Los Angeles County Flood Control District stopped compiling data on the shallow aquifer in 1975 because they were out of use in the area at that time. (9).

### 7.4 Surface Water Features

Average rainfall for the Santa Fe Springs area is approximately 13 to 14 inches annually. Located 1/4 mile to the northeast is the Soresen Avenue storm drain. This concrete-lined channel is the only surface water feature within one mile of the facility. The San Gabriel River is slightly over one mile west of the facility. The associated percolation basins are located 1-1/2 to 2 miles northwest of the site. Due to the semi-arid climate of Southern California, the streams are intermittent.

## 8.0 DISCUSSION

### 8.1 Soil Samples

Twelve soil samples were analyzed for the compounds listed in Section 5.0. Table B presents the inorganic chemical data for borings 1 through 6 and monitoring wells 1 through 3. Table C presents the organic chemical data from monitoring well 2.

Analysis indicates that organic chemicals, as detected by EPA method 8270, are not present in either the 15 and 40 foot samples of monitoring well 2 at the levels listed in Table C. Monitoring well 2 was selected for organic analysis since it was in the center of the south yard downgradient of the underground tanks, near the drum storage shed. It was therefore assumed that if organic chemicals were present in the soil, they would be detected in this well.

Inorganic chemicals, unlike organic chemicals, are present at background levels in the soil. To determine if plant operations have elevated any of the inorganic chemicals above background, three of the nine borings (B3, B4 and B5) were drilled in widely distributed locations in the field behind the warehouses. These borings were located in an open field far from plant operations. This area has historically been used for agriculture purposes. It was assumed that samples from these borings represent background levels for the area.

Comparing these background levels with levels detected in the south yard area indicates that all the substances detected in the south yard area were within one magnitude of assumed background levels. It should be noted that a one magnitude change is not uncommon in background levels, therefore, it is believed that plant operations have not caused noticeable degradation of the soil in the south yard area.

#### 8.2 Groundwater Samples

Groundwater samples were collected from all three monitoring wells on November 21, 1985. Samples were analyzed for primary drinking water substances. Two quality control samples were also analyzed to determine if cross-contamination had occurred during sampling. Table D and E presents the groundwater quality data. Analysis indicated that all substances are below the Primary Drinking Standards in monitoring wells 1 through 3. Monitoring well number 3 was also analyzed for purgeable halocarbons per EPA method 601. Analysis indicates that methylene chloride, 1,1-dichloroethene, 1,1 dichloropropane, trichloroethene, 1,1,2,2 tetrachloroethane and tetrachloroethene were detected at low levels. Comparison of the existing DOHS "action levels" with the organic chemicals detected indicates that the sample from MW3 is below the action level for methylene chloride, 1,1,1 trichloroethane and 1,2-dichloropropane.

Therefore, it is assumed that if plant operations have caused degradation of the groundwater, the levels are probable below



levels of concern. This, however, is a determination that will be made by DOHS.

#### 9.0 CONCLUSIONS

The following general conclusions can be drawn from the foregoing data. Future studies may add to, and/or change these conclusions.

1. A confined aquifer exists beneath the site with a potentiometric surface between approximately 46 to 48 feet below ground level.
2. The general direction of groundwater flow is to the south-southwest, while site-specific flow is to the west-southwest.
3. Relatively low permeability soils were encountered from the surface to approximately 10 feet below ground surface. A second low permeability zone was encountered at approximately 25 to 50 feet below ground surface.
4. Water quality of samples from monitoring wells 1, 2 and 3 contained constituents below the Primary Drinking Water Standards.
5. Purgeable halocarbons were detected in the groundwater at levels that are below DOHS action levels.
6. No elevated levels of organic acids or pesticides were detected in the soil.

7. Soil samples from the south yard area are within one-magnitude of the levels established as background for the site.

#### 10.0 RECOMMENDATIONS

At this time, it appears that there are no environmental reasons why Diversey Wyandotte should not proceed with the plan to sell this portion of the property. As discussed above, low levels of organic chemicals were detected in the groundwater beneath the site. It is suggested that Diversey Wyandotte perform the following:

1. Resample the three monitoring wells and analyze by EPA method 601.
2. Discuss these results with DOHS to determine their position on the detected chemical compounds and their action levels.
3. Analyze soil samples from each boring for EPA method 8010 to determine if the organic chemicals were the result of on-site usage.

#### 11.0 REFERENCES

The references used in the preparation of this preliminary report include, but are not limited to, the following:

1. U.S.G.S. Topographic map, Whittier Quadrangle, 1981.
2. DWR Bulletin 104, Appendix A.
3. Division of Water Rights map, Location of Water Wells.



4. Watermaster Service Central Basin, Los Angeles County, July 1, 1982 - June 30, 1982.
5. Watermaster Service Central Basin, Los Angeles County, July 1, 1982 - June 30, 1983.
6. DWR Bulletin 8.
7. DWR Bulletin 63, Appendix A
8. Report on TCE Investigation, Los Angeles Regional Water Quality Control Board, April 1980.
9. Coastal Plain Ground Water Contours, Shallow Aquifer, Los Angeles Flood Control District, map no. 2-H240, Fall, 1975.

#### 12.0 LIMITATIONS

The conclusions and recommendations in this report are based on:

1. The nine test borings performed at this site.
2. The observations of our field personnel.
3. The results of laboratory tests performed by Curtis E. Tompkins Laboratory.
4. The results of the land survey conducted by Thomsen Engineering, Inc.
5. Measurements of groundwater elevations in the three monitoring wells.
6. Referenced documents.

It is possible that variations in the soil or groundwater conditions could exist beyond the points explored in this investigation. Also, changes in the groundwater conditions found

could occur at some time in the future due to variations in rainfall, temperature, regional water usage, or other factors. The services performed by J. H. KLEINFELDER & ASSOCIATES have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the Los Angeles County Area. No other warranty, express or implied, is made.

Respectfully submitted,

J. H. KLEINFELDER & ASSOCIATES

*Kenneth L. Durand*

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Staff Hydrogeologist

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TABLE B  
TABULATION OF SOIL DATA  
(mg/l)

Boring Depth	MW1 15'	MW1 40'	MW2 15'	MW2 40'	MW3 15'	MW3 40'	B1 5'	B2 5'	B3 5'	B4 5'	B5 5'	B6 5'
pH (units)	6.8	7.6	6.9	7.6	7.49	8.59	6.49	7.45	7.60	8.66	7.49	7.29
Antimony	ND0.03	ND0.03	ND0.03	ND0.03	ND.05	ND.05	ND.05	ND.05	ND.05	ND.05	ND.05	ND.05
Arsenic	0.025	0.27	0.17	ND0.01	0.056	0.066	0.084	0.036	0.065	0.061	0.046	0.033
Beryllium	ND0.01	ND0.01	ND0.01	ND0.01	ND.01	ND.01	ND.01	ND.01	ND.01	ND.01	ND.01	ND.01
Cadmium	ND0.01	ND0.01	ND0.01	0.02	ND.012	ND.012	ND.012	ND.012	ND.012	ND.012	ND.012	ND.012
Chromium	ND0.01	ND0.01	2.9	ND0.01	ND.03	0.10	2.7	0.22	0.10	0.30	0.05	0.10
Copper	2.3	1.0	1.8	1.2	1.7	ND.02	0.4	0.22	0.10	0.32	1.6	2.1
Lead	ND0.04	0.15	0.06	0.05	0.30	ND.15	0.20	ND.15	ND.15	ND.15	ND.15	ND.15
Mercury	ND0.01	ND0.01	ND0.01	ND0.01	ND.01	ND.01	0.03	ND.01	ND.01	ND.01	ND.01	ND.01
Nickel	0.07	0.16	0.09	0.05	ND.03	0.15	0.30	0.40	0.30	0.22	0.30	0.35
Selenium	ND0.04	ND0.04	ND0.04	ND0.04	ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	ND.02
Silver	ND0.01	ND0.01	ND0.01	ND0.01	ND.02	ND.02	ND.02	ND.02	ND.02	ND.02	0.04	ND.02
Thallium	ND0.01	ND0.01	ND0.01	ND0.01	ND.01	ND.01	ND.01	ND.01	ND.01	ND.01	ND.01	ND.01
Zinc	3.1	1.8	2.2	0.47	0.90	ND.10	0.30	ND.10	ND.10	0.30	1.0	1.2
Vanadium	ND0.5	ND0.5	ND0.5	ND0.5	ND.32	.60	1.3	1.5	0.95	0.72	1.3	1.0
Molybdenum	ND0.2	ND0.2	ND0.2	ND0.2	ND.15	.23	0.22	0.21	0.37	0.15	0.21	0.21
Cobalt	0.11	0.14	0.10	0.54	0.07	0.09	0.58	0.91	0.40	0.70	0.64	0.70
Borium	2.5	9.0	3.7	4.0	3.0	7.7	15	15	8.9	7.1	13	12
Phosphate	777	677	842	1303	0.07%	0.02%	0.03%	0.13%	0.02%	0.03%	0.03%	0.03%
Chloride	--	--	--	--	ND50	ND50	300	ND50	ND50	ND50	ND50	ND50
Ammonia	--	--	--	--	ND50	ND50	ND50	ND50	ND50	ND50	ND50	ND50

NOTES: ND0.5 = Not detected at 0.5 mg/l

TABLE C  
TABULATION OF SOIL DATA  
EPA METHOD 624 (EXPANDED)  
VOLATILE ORGANICS\*  
(ug/kg)

Boring Depth	MW2 15	MW2 40
<u>COMPOUND</u>		
benzene	ND 500	ND 500
carbon tetrachloride	ND 100	ND 100
chlorobenzene	ND 100	ND 100
1,2-dichloroethane	ND 100	ND 100
1,1,1-trichloroethane	ND 100	ND 100
1,1-dichloroethane	ND 100	ND 100
1,1,2-trichloroethane	ND 100	ND 100
1,1,2,2-tetrachloroethane	ND 100	ND 100
chloroethane	ND 100	ND 100
1,1-dichloroethene	ND 100	ND 100
1,2-trans-dichloroethene	ND 100	ND 100
1,2-dichloroethane	ND 100	ND 100
1,3-dichloropropylene	ND 100	ND 100
ethylbenzene	ND 100	ND 100
methylene chloride	ND 100	ND 100
chloromethane	ND 100	ND 100
bromomethane	ND 100	ND 100
bromoform	ND 100	ND 100
bromodichloromethane	ND 100	ND 100
fluorotrichloromethane	ND 100	ND 100
dichlorodifluoromethane	ND 100	ND 100
chlorodibromomethane	ND 100	ND 100
tetrachloroethene	ND 100	ND 100
toluene	ND 100	ND 100
trichloroethene	ND 100	ND 100
vinyl chloride	ND 100	ND 100

Non-Priority Hazardous Pollutant Substances List Compound

acetone	ND 500	ND 500
2-butanone	ND 500	ND 500
carbon disulfide	ND 200	ND 200
2-hexanone	ND 500	ND 500
4-methyl-2-pentanone	ND 500	ND 500
styrene	ND 200	ND 200
vinyl acetate	ND 1000	ND 1000
total xylenes	ND 200	ND 200

\*Methanol Extract

NOTES: ND500 = Not detected at 500 ug/kg

TABLE D  
TABULATION OF WATER DATA  
(mg/l)

	QC1	MW1	MW2	QC2	MW3	Drinking Water Standards
Arsenic	ND.01	ND.01	ND.01	ND.01	ND.01	0.05
Selenium	ND.01	ND.01	ND.01	ND.01	ND.01	0.01
Mercury	ND.1	ND.1	ND.1	ND.001	ND.001	.002
Silver	ND.01	ND.01	ND.01	ND.01	ND.01	0.05
Barium	ND.3	ND.3	0.36	ND.3	ND.30	1.0
Cadmium	ND.01	ND.01	ND.01	ND.01	ND.01	0.01
Chromium	0.02	ND.01	ND.01	ND.01	ND.01	0.05
Lead	ND.06	ND.06	ND.06	ND.06	ND.06	0.05
Flourine	ND.01	0.36	0.34	ND.01	0.31	—
Nitrate	2.0	27.0	25.2	2.3	4.1	45

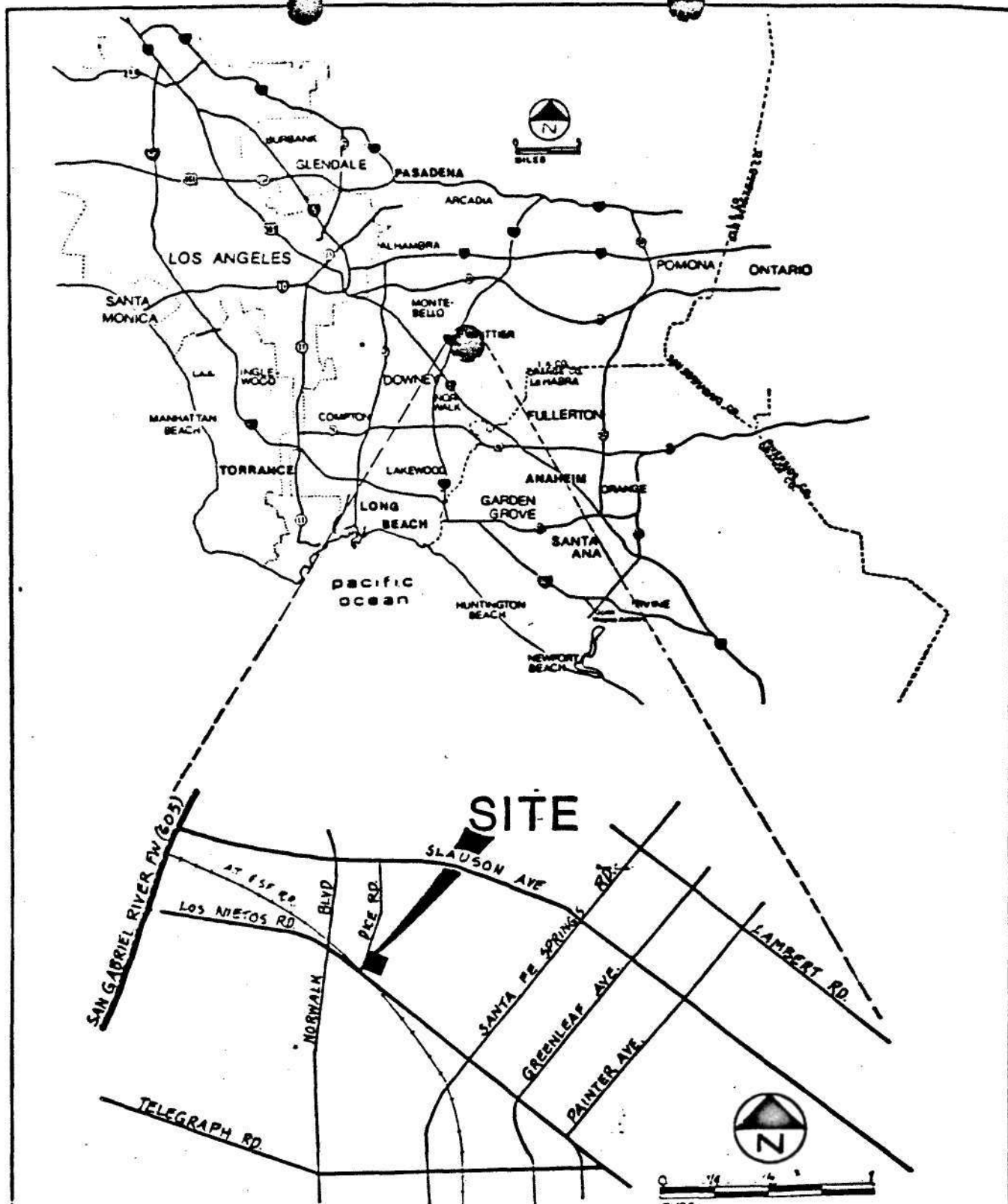
NOTES: QC1 = Quality Control Sample Number 1  
MW1 = Sample from Monitoring Well number 1  
ND.1 = Not detected at .1 mg/l

TABLE E  
TABULATION OF WATER DATA

EPA 601  
Purgeable Halocarbons  
(ug/l)

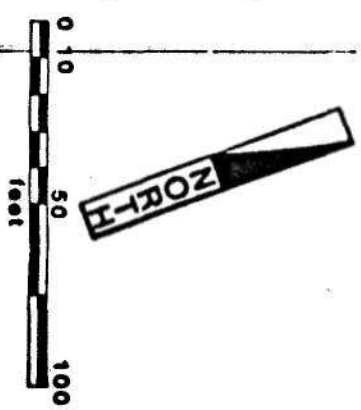
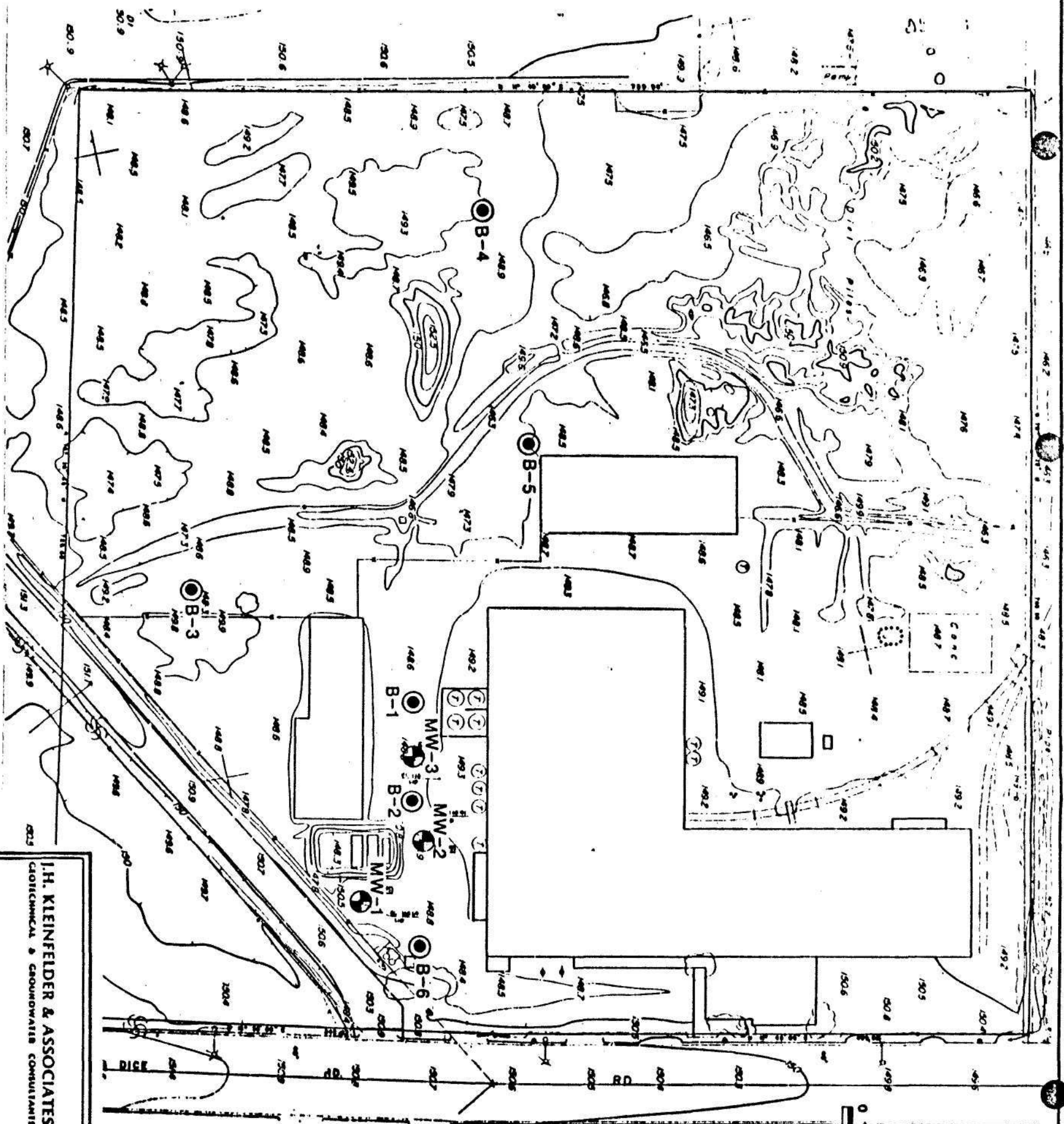
	<u>MW3</u>	<u>DOHS</u> <u>"Action Level"</u>
methylene chloride	14	40
trichlorofluoromethane	ND1	
1,1-dichloroethene	34	
1,1-dichloroethane	5	
trans-1,2-dichloroethene	ND1	
Chloroform	3	
1,1,2-trichloro-2,2,1-trifluoroethane	ND1	
1,3-dichloroethane	ND1	
1,1,1-trichloroethane	8	200
carbon tetrachloride	ND1	
bromodichloromethane	ND1	
1,2-dichloropropane	3	10
trans-1,3-dichloropropene	ND1	
trichloroethene	90	
dibromochloromethane	ND1	
1,1,2-trichloroethane	ND1	
cis-1,3-dichloropropene	ND1	
bromoform	ND1	
1,1,2,2-tetrachloroethane	8	
tetrachloroethene	9	
chlorobenzene	ND1	

NOTES: ND1 - Not detected at 1 ug/l



<b>I H KLEINFELDER &amp; ASSOCIATES</b> GEOTECHNICAL CONSULTANTS • MATERIALS TESTING		<b>DIVERSEY WYANDOTTE CORPORATION</b> SANTA FE SPRINGS, CA.	PLATE  <b>1</b>
<b>SITE LOCATION MAP</b>			
PREPARED BY: _____ CHECKED BY: _____	DATE: _____ DATE: _____	PROJECT NO. PQ 85-129	





**EXPLANATION**

⊕ MW-3 MONITORING WELL

● B-6 SOIL BORING



# UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS		LTR	DESCRIPTION	MAJOR DIVISIONS		LTR	DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well-graded gravels or gravel sand mixtures, little or no fines.	FINE GRAINED SOILS	SILTS AND CLAYS LL<50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		GP	Poorly-graded gravels or gravel sand mixture, little or no fines.			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		GM	Silty gravels, gravel-sand-clay mixtures.			OL	Organic silts and organic silt-clays of low plasticity
		GC	Clayey gravels, gravel-sand-clay mixtures.				
	SAND AND SANDY SOILS	SW	Well-graded sands or gravelly sands, little or no fines.		SILTS AND CLAYS LL>50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		SP	Poorly-graded sands or gravelly sands, little or no fines.			CH	Inorganic clays of high plasticity fat clays.
		SM	Silty sands, sand-silt mixtures.			OH	Organic clays of medium to high plasticity.
		SC	Clayey sands, sand-clay mixtures.				
			HIGHLY ORGANIC SOILS		Pe	Peat and other highly organic soils.	



Standard penetration split spoon sample



Modified California sampler



Shelby tube sample



Water level observed in boring

• No recovery

NFWE No free water encountered

NOTE: The lines separating strata on the logs represent approximate boundaries only. The actual transition may be gradual. No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

J.H. KLEINFELDER & ASSOCIATES  
GEOTECHNICAL CONSULTANTS - MATERIALS TESTING



## BORING LOG LEGEND

PLATE

3

PREPARED BY: DATE:

CHECKED BY: DATE:

PROJECT NO.

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
0				Locking Well cap PVC cap	
5	67	5	CL	PID lppm Clay: Strong brown, 2.5 YR/4/4, very stiff dry-damp	
10	17	10	SP	Sand: medium to fine, 5YR/5/6, yellow red, medium dense, dry	
15	57	15	SP	PID lppm Sand: fine to medium grained, yellow-red 5YR/5/8, very dense, moist	
20	52	20	CL	Clay: with silt, strong brown, 7.5YR/4/6 very stiff, moist	
25	31	25	CL	Clay: dark yellowish-red, 10YR/4/4, very stiff, moist	
30					

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DIVERSEY-WYANDOTTE  
Santa Fe Springs, California

PLATE

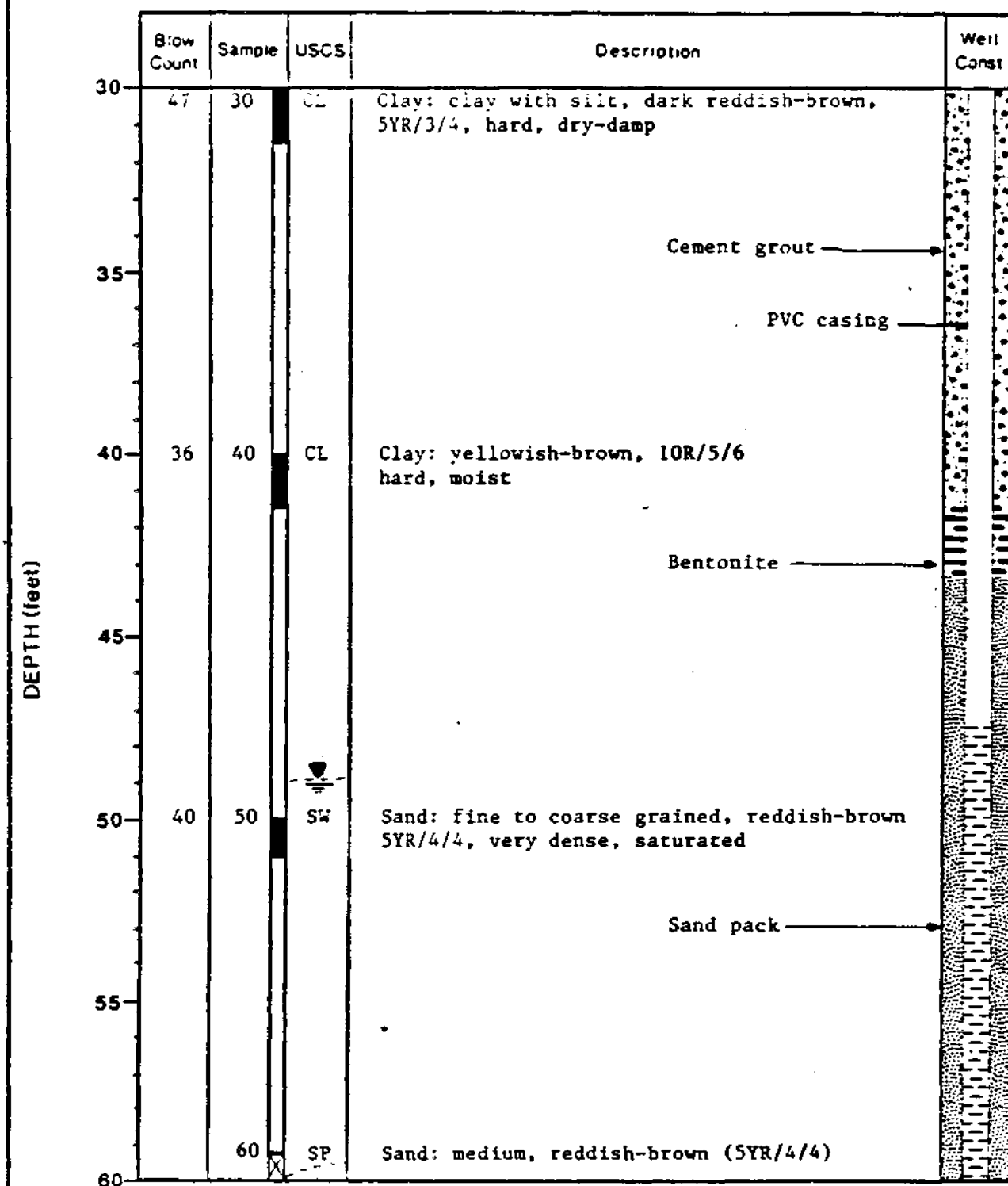
## LOG of BORING MW-1

4

PREPARED BY: NAP DATE: 11/86

CHECKED BY: KD DATE: 11/86

PROJECT NO. Q1073-1



J H KLEINFELDER & ASSOCIATES

GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE  
Santa Fe Springs, California

PLATE

4

PREPARED BY: NAP DATE 1/86

CHECKED BY: KD DATE 1/86

LOG of BORING MW-1

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
60					
				Sand pack	
				Slotted PVC casing	
65					
70		70	X SP	Sand: medium, reddish-brown (5YR/4/4)	
75	50+	75	ML/GM	Silt: dark yellowish-brown (10YR/4/4) very dense, wet Tip of sample had fine gravelly silt.	
80				Boring Terminated at 78' Date of Drilling: 11/13/85 Drilling Done By: Ken Durand/ Jeff Friedman	
85					
90					

I. H. KLEINFELDER & ASSOCIATES  
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DIVERSEY-WYANDOTTE  
 Santa Fe Springs, California

PLATE

LOG of BORING MW-1

4

PREPARED BY: NAP DATE: 1/86

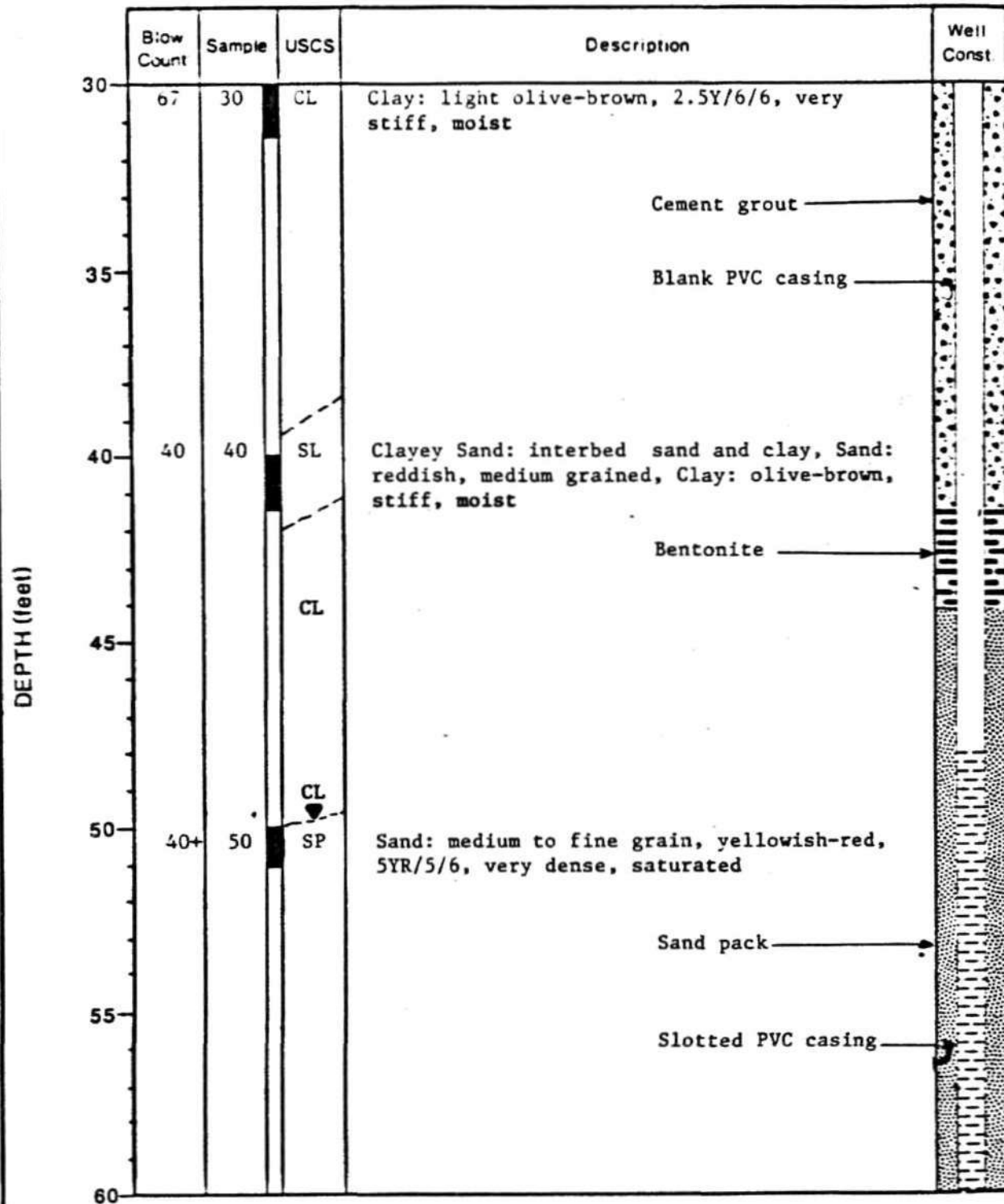
CHECKED BY: KD DATE: 1/86

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
0				Locking well cap PVC cap	
			CL	Clay: silt, yellowish-red, 5YR/4/6	
5	56	5	CL	Clay: with silt & fine sand, yellowish-red 5YR/4/6, very stiff, dry	
10	44	10	SP	PID 85ppm slight odor Sand: fine to medium grained, light brown 7.5YR/6/4, dense, dry	
15	60	15	SP	PID 0ppm Sand: medium to coarse grained, light brown, 25Y/6/4, very dense, damp-dry	
20	56	20	ML	Clayey Silt: strong brown, 25YR/3/4 very stiff, moist	
25	51	25	CL	Clay: light olive-brown, 2.5Y/6/6, very stiff, moist	
30					

<b>J. H. KLEINFELDER &amp; ASSOCIATES</b> GEOTECHNICAL CONSULTANTS * MATERIALS TESTING	DIVERSEY-WYANDOTTE Santa Fe Springs, California	PLATE  <b>5</b>
	<b>LOG of BORING MW-2</b>	
PREPARED BY: NAP    DATE: 11/86 CHECKED BY: KD    DATE: 11/86	PROJECT NO. Q1073-1	



J.H. KLEINFELDER & ASSOCIATES  
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE  
 Santa Fe Springs, California

PLATE

5

# LOG of BORING MW-2

PREPARED BY: NAP DATE 1/86

CHECKED BY: KD DATE 1/86

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
60					
			SP	Sand: medium to coarse sand, saturated	
		X			
65					
70					
75					
			SP	Sand: medium to fine grain, brown, 7.5YR/4/2 very dense, saturated	
		X			
80				Boring Terminated at: 78'	
				Date Of Drilling: 11/12/85	
				Drilling Done By: Ken Durand	
85					
90					

J.H. KLEINFELDER & ASSOCIATES  
GEOTECHNICAL CONSULTANTS & MATERIALS TESTING



DIVERSEY-WYANDOTTE  
Santa Fe Springs, California

## LOG of BORING MW-2

PREPARED BY: NAP DATE: 1/86

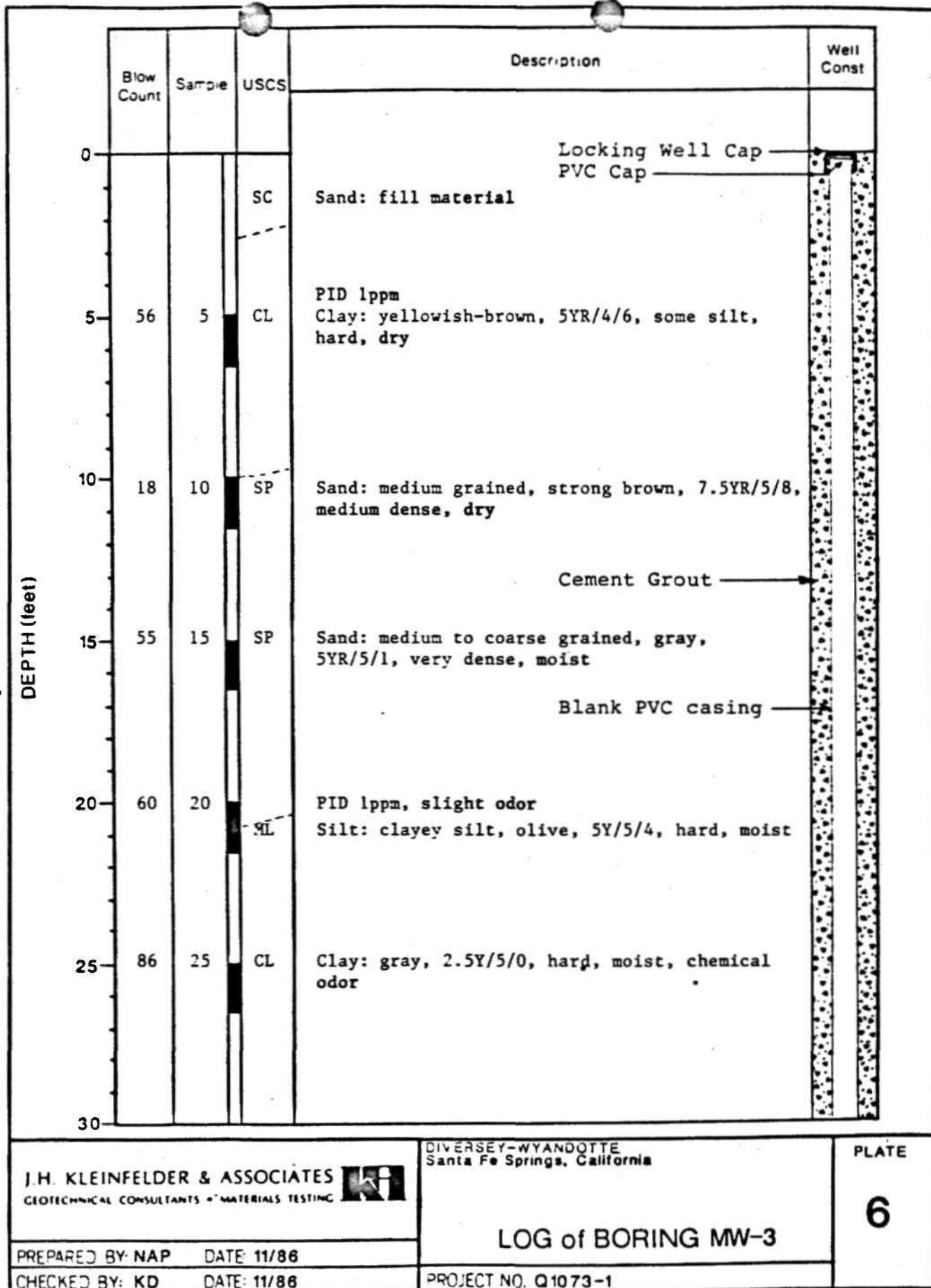
CHECKED BY: KD DATE: 1/86

PROJECT NO. C1073-1

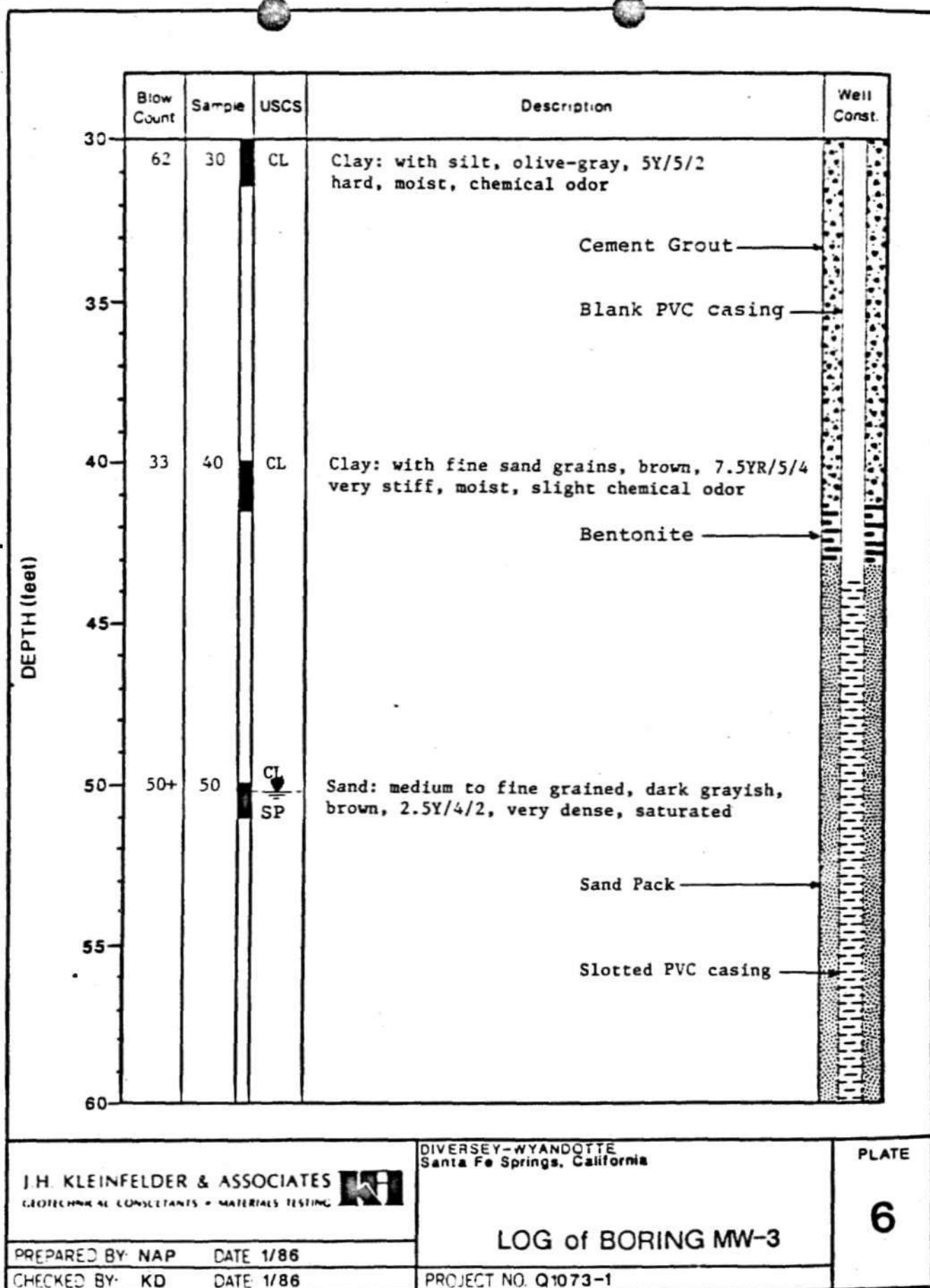
PLATE

5









DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
60					
				Sand Pack	
65				Slotted PVC casing	
70					
75			SP	Sand: medium grained, light reddish brown, 5YR/6/4, very dense, saturated	
				Boring Terminated At: 75'	
				Date of Drilling: 11/14/85	
				Drilling Done by: K. Durand	
80					
85					
90					

J H. KLEINFELDER & ASSOCIATES  
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DIVERSEY-WYANDOTTE  
 Santa Fe Springs, California

# LOG of BORING MW-3

PREPARED BY: NAP DATE: 1/86  
 CHECKED BY: KD DATE: 1/86

PROJECT NO. Q1073-1

PLATE

6

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
0	13	1	ML	Silt: with fine grained sand, black, 5YR/2.5/1, stiff, damp  No recovery	
5	48	5	ML/CL	Silty Clay: reddish brown, 5YR/4/3, hard, moist	
10	34	10	ML	Silt: with fine grained sand, dark gray, 7.5YR/4/0, very stiff, moist	
20	65	20	SP	Sand: coarse sand with pebbles, gray, 2.5Y/5/0 very dense, moist, slight chemical odor	
25					
30					

<b>J. H. KLEINFELDER &amp; ASSOCIATES</b> GEOTECHNICAL CONSULTANTS • MATERIALS TESTING	DIVERSEY-WYANDOTTE Santa Fe Springs, California	<b>PLATE</b>  <div style="font-size: 2em; font-weight: bold;">7</div>
	<div style="text-align: center; font-size: 1.2em; font-weight: bold;">LOG of BORING B-1</div>	
PREPARED BY: <b>NAP</b> DATE: 1/86		
CHECKED BY: <b>KD</b> DATE: 1/86	PROJECT NO. <b>Q1073-1</b>	

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
30	70	30	CL	No recovery, grab sample from auger, Clay: hard, moist, slight chemical odor	
35				Boring Terminated at: 30' Date of Drilling: 11/15/85 Drilling Done By: Ken Durand	
40					
45					
50					
55					
60					

J.H. KLEINFELDER & ASSOCIATES  
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

DIVERSEY-WYANDOTTE  
 Santa Fe Springs, California

PLATE

7

LOG of BORING B-1

PREPARED BY: NAP DATE 1/86

CHECKED BY: KD DATE 1/86

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
	0				
50	1		ML	Silt: with fine grained sand, very dark gray, 5YR/3/1, very hard, dry	
13	3		ML	Silt: with coarse sand, yellowish-red, 5YR/4/4, stiff, moist	
5	30	5	CI	Clay: dark reddish brown, 5YR/3/4, stiff moist	
10	32	10	SP	Sand: fine to coarse grained, strong brown, 7.5YR/5/6, medium dense, moist	
20	40	20	SP	Sand: medium to coarse, black (2.5Y/2/0) gray (2.5Y/6/0), dense, moist, chemical odor	
25					
30					

J H KLEINFELDER & ASSOCIATES GEOTECHNICAL CONSULTANTS • MATERIALS TESTING		DIVERSEY-WYANDOTTE Santa Fe Springs, California	PLATE  <div style="font-size: 2em; font-weight: bold; text-align: center;">8</div>
PREPARED BY: NAP    DATE: 11/86		<div style="font-size: 1.5em; font-weight: bold;">LOG of BORING B-2</div>	
CHECKED BY: KD    DATE: 11/86			
		PROJECT NO. Q1073-1	

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
30	45	30	CL	Clay: gray (5Y/5/1), hard, moist, chemical odor	
35				Boring Terminated at: 30'	
				Date of Drilling: 11/15/85	
				Drilling Done By: Ken Durand	
40					
45					
50					
55					
60					

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 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE  
 Santa Fe Springs, California

PLATE

8


## LOG of BORING B-2

PREPARED BY: NAP DATE: 1/86

CHECKED BY: KD DATE: 1/86

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
	0				
	31	1	SP/ML	Silt & Sand: medium and fine grained sand & silt, reddish-brown, 5YR/5/4, medium dense, dry	
	45+	3	ML/SP	Silt & Sand: silt with medium sand with organic matter, light brown, 7.5YR/6/4, very dense, dry	
5	55+	5	CL/ML	Clay & Silt: light brown, 2.5YR/6/4, very hard dry	
10	59	10		No recovery	
15	68	15	SP	Sand: medium to coarse grained sand, reddish-brown, 5YR/5/3, very dense, moist	
20	50+	20	SP	Sand: medium to coarse grained, reddish-brown, 5YR/5/3, very dense, moist	
25					
30					

**J.H. KLEINFELDER & ASSOCIATES** 

GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

DIVERSEY-WYANDOTTE  
Santa Fe Springs, California

PLATE

**9**

PREPARED BY: NAP    DATE: 11/86 CHECKED BY: KD    DATE: 11/86	<p><b>LOG of BORING B-3</b></p> <p>PROJECT NO. Q1073-1</p>
--	--

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
30	38	30	CL	Clay: yellowish-red, 7.5YR, 6/6, very stiff, moist	
35				Boring Terminated at: 30'	
				Date of Drilling: 11/15/85	
				Drilling Done by: Ken Durand	
40					
45					
50					
55					
60					

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 GEOTECHNICAL CONSULTANTS - MATERIALS TESTING



DIVERSEY-WYANDOTT  
 Santa Fe Springs, California

PLATE

9

LOG of BORING B-3


PREPARED BY: NAP DATE: 1/86

CHECKED BY: KD DATE: 1/86

PROJECT NO. Q1073--



DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
	0				
	52	1	ML	Silt: with fine grained sand, yellowish-brown, 10YR/5/4, hard, dry	
	55+	3	CL	Clay: reddish-yellow, 7.5YR/6/6, hard, dry	
5	50+	5	CL	Clay: with fine sand, reddish-brown, very hard, dry	
10	48	10	CL	Clay: reddish-brown, 5YR/5/4, hard, dry	
15					
20	55+	20	SP	Sand: medium to coarse grained, reddish-yellow 7.5YR/6/6, very dense, damp	
25					
30					

**J.H. KLEINFELDER & ASSOCIATES** 

GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

DIVERSEY-WYANDOTTE  
Santa Fe Springs, California

PLATE

**10**

PREPARED BY: NAP      DATE: 11/86	<h2 style="margin: 0;">LOG of BORING B-4</h2>
CHECKED BY: KD      DATE: 11/86	
PROJECT NO. Q1073-1	

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
30	31	30	CL	Clay: light olive-brown, 2.5Y/5/4, very stiff, moist	
35				Boring Terminated at: 30'	
				Date of Drilling: 11/15/85	
				Drilling Done By: Ken Durand	
40					
45					
50					
55					
60					

J. H. KLEINFELDER & ASSOCIATES GEOTECHNICAL CONSULTANTS • MATERIALS TESTING		DIVERSEY-WYANDOTTE Santa Fe Springs, California		PLATE  <b>10</b>
PREPARED BY: NAP    DATE: 1/86		LOG of BORING B-4		
CHECKED BY: KD    DATE: 1/86		PROJECT NO. Q1073-1		

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
	0				
40	1		SM	Silty Sand: fine grained sand with silt, strong brown, 7.5YR/5/6, medium dense, dry	
45	3		ML	Silt: silt with fine sand, light reddish-brown 5YR/5/4, hard, dry	
5	90	5	ML	Silt: silt with fine sand, light reddish-brown 5YR/5/4, hard, dry	
10	27	10	SP	Sand: fine sand, light olive brown, 2.5Y/5/4, medium dense, damp	
15					
20	70	20	SP	Sand: medium to fine grained, gray (10YR/6/1), very dense, dry	
25					
30					

<b>J.H. KLEINFELDER &amp; ASSOCIATES</b> GEOTECHNICAL CONSULTANTS • MATERIALS TESTING		DIVERSEY-WYANDOTTE Santa Fe Springs, California	<b>PLATE</b>  <b>11</b>
PREPARED BY: NAP    DATE: 11/86		<b>LOG of BORING B-5</b>	
CHECKED BY: KD    DATE: 11/86			
PROJECT NO. Q1073-1			

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
30	55	30	CL	Clay: strong brown, 7.5YR/5/6, hard, moist	
35				Boring Terminated At: 30'	
				Date of Drilling: 11/15/85	
				Drilling Done by: Ken Durand	
40					
45					
50					
55					
60					

J. H. KLEINFELDER & ASSOCIATES  
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE  
 Santa Fe Springs, California

PLATE

LOG of BORING B-5

11

PREPARED BY: NAP DATE 1/86

CHECKED BY: KD DATE 1/86

PROJECT NO. Q1073-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
0					
25	1		ML	Silt: silt with fine sand, dark grayish-brown 10YR/4/2, stiff, dry	
63	3			No recovery, hard	
45+	5		CL	Clay: with fine sand, reddish-brown, 5YR/4/3, very hard, moist	
12	10		SP	Sand: fine to medium grained, reddish-yellow, 7.5 YR/6/6, loose, moist	
60	20			No recovery	
25	25		SL	Clayey Sand: medium to fine grained sand with clay, reddish-brown, 5YR/4/3, very dense, moist	
30					

J. H. KLEINFELDER & ASSOCIATES GEOTECHNICAL CONSULTANTS • MATERIALS TESTING		DIVERSEY-WYANDOTTE Santa Fe Springs, California	PLATE  <b>12</b>
PREPARED BY: NAP    DATE 11/88		LOG of BORING B-6	
CHECKED BY: KD    DATE 11/88		PROJECT NO. Q1073-1	

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
30	45	30	CL	Clay: pale brown, 10YR/6/3 hard, moist	
35				Boring Terminated at: 30' Date of Drilling: 11/15/85 Drilling Done by: Ken Durand	
40					
45					
50					
55					
60					

J.H. KLEINFELDER & ASSOCIATES  
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING



DIVERSEY-WYANDOTTE  
Santa Fe Springs, California

PLATE

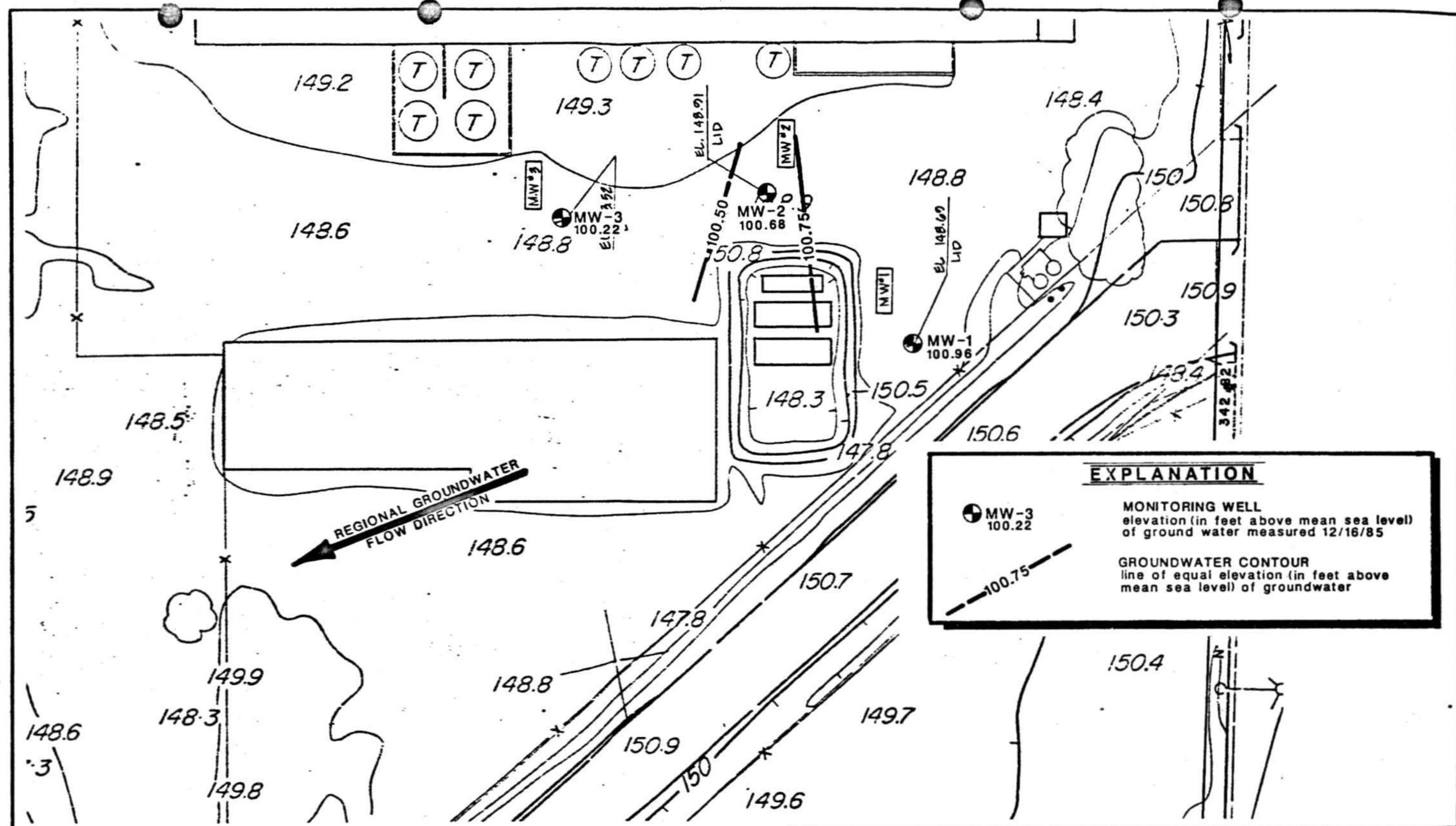
LOG of BORING B-6

12

PREPARED BY: NAP DATE 1/86

CHECKED BY: KD DATE 1/86

PROJECT NO. Q1073-1



**EXPLANATION**

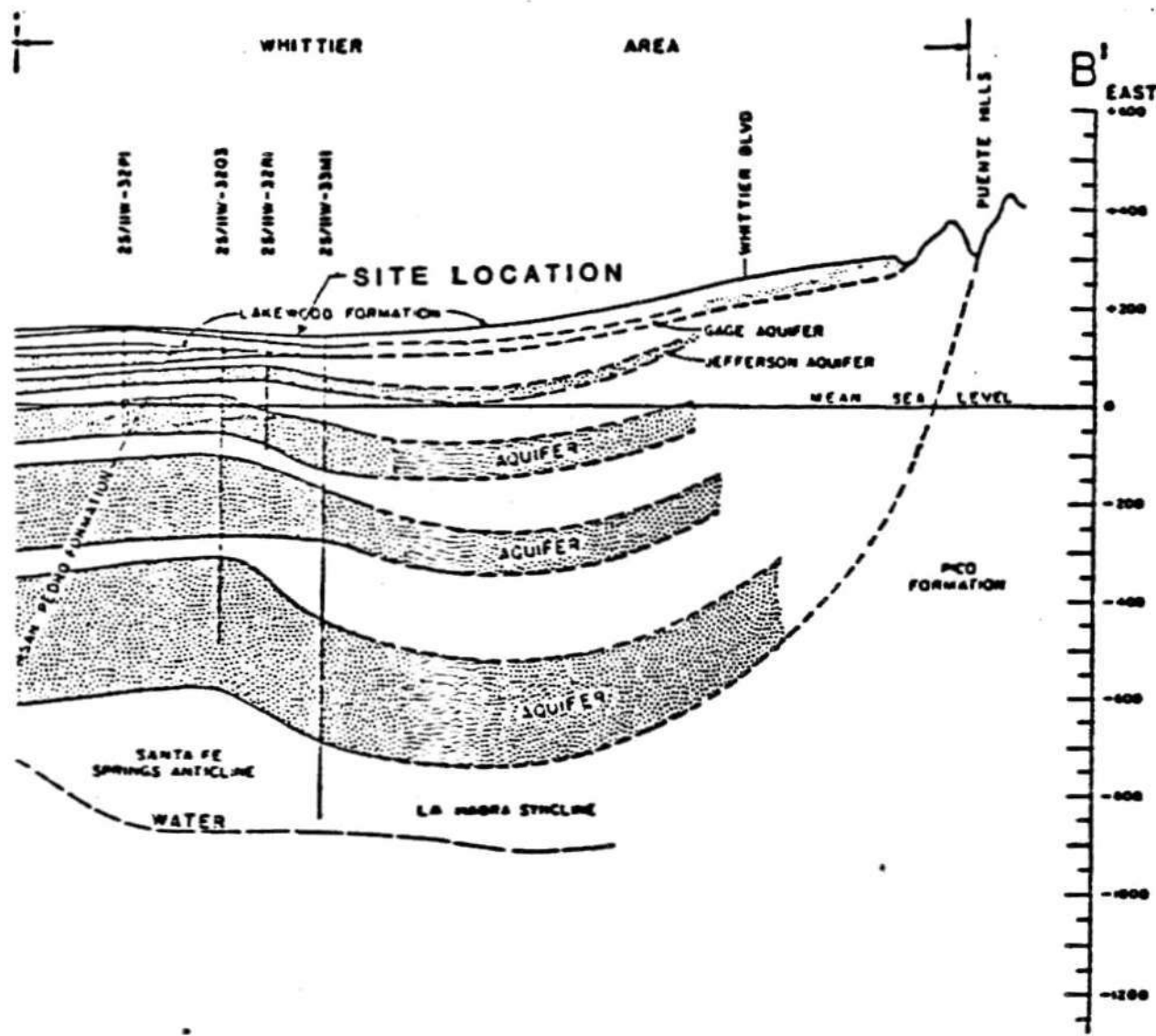
● MW-3  
100.22

MONITORING WELL  
elevation (in feet above mean sea level)  
of ground water measured 12/16/85

--- 100.75 ---

GROUNDWATER CONTOUR  
line of equal elevation (in feet above  
mean sea level) of groundwater





I H KLEINFELDER & ASSOCIATES  
 GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

# REGIONAL CROSS-SECTION

PLATE  
 14

PREPARED BY: DATE:  
 CHECKED BY: DATE:

PROJECT NO.



J. H. KLEINFELDER & ASSOCIATES

APPENDIX

A

# CHAIN OF CUSTODY RECORD

SAMPLERS: (Signature)

Phone:

SHIP TO:

ATTENTION:

Phone No.

## SHIPPING INFORMATION

Shipper

Address

Date Shipped

Shipment Service

Airbill No.

Cooler No.

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Receive for laboratory by: (Signature)

Date/Time

\*Analysis laboratory should complete, "sample condition upon receipt", section below, sign and return top copy to J. H. KLEINFELDER & ASSOCIATES, 15303 Ventura Blvd., Suite 700, Sherman Oaks, CA 91403-3156.

Sample Number

Site Identification

Date Sampled

Analysis Requested

Sample Condition Upon Receipt

1-25

5-1275-1

11/1/85

1.11

1-10

1

1

1.11

1-11

1

1

1.11

1-22

1

1

1.11

1-3

1

1

1.11

1-30

1

1

1.11

1-40

1

1

1.11

1-5

1

1

1.11

1-75

1

1

1.11

1-85

1

11/1/85

1.11

1-10

1

1

1.11

1-15

1

1

1.11

1-20

1

1

1.11

1-25

1

1

1.11

LAB INSTRUCTIONS: Laboratory reports should reference and be billed by site ID# and contain the following:

- summary of analytical methodology and QA work (blanks, spikes, duplicates)
- dates for (a) sampling, (b) lab receipt, (c) extraction, (d) injection/analysis
- detection limits for all constituents analyzed for and reporting of all constituents detected which were not specifically designated

White - Sampler

Canary - J. H. Kleinfelder & Associates

Pink - Lab Courtesy Copy

(HKS&A Form M-40, 1/78)

## SHIPPING INFORMATION

מחז:

SHIP TO:

**Shipper****Address****Date Shipped**

### Shipment Service

**Airbill No.**

Cooler No.

**ATTENTION:**

**Phone No.**

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Receive for laboratory by: (Signature)

Date/Time

**Sample  
Number**

### Site Identification

Date Sampled

**Analysis Requested**

**Sample Condition  
Upon Receipt**

1-2-

175-1

3. 1. 1.

1. 1. 1.

4 4 3

\_\_\_\_\_

\_\_\_\_\_

1.13

21

\_\_\_\_\_

1.

10/1/2

AB INSTRUCTIONS: Laboratory reports should reference and be billed by site ID# and contain the following:

- (1) summary of analytical methodology and QA work (blanks, spikes, duplicates)  
(2) dates for (a) sampling, (b) lab receipt, (c) extraction, (d) injection/analysis  
detection limits for all constituents analyzed for and reporting of all constituents detected which were not specifically designated

White - Sampler

Canary - J. H. Kleinfelder & Associates

Pink - Lab Courtesy Copy

• IHEBA Form M-60

# CHAIN OF CUSTODY RECORD

SAMPLERS: (Signature)

## SHIPPING INFORMATION

one: \_\_\_\_\_

SHIP TO:

Shipper

Address

Date Shipped

Shipment Service

Airbill No.

Cooler No.

ATTENTION:

Phone No.

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Receive for laboratory by: (Signature)

Date/Time

\*Analysis laboratory should complete, "sample condition upon receipt", section below, sign and return top copy to J. H. KLEINFELDER & ASSOCIATES, 15303 Ventura Blvd., Suite 700, Sherman Oaks, CA 91403-3156.

Sample Number	Site Identification	Date Sampled	Analysis Requested	Sample Condition Upon Receipt
1-25	51-25-1	1/1	601	
2-25		1/1	601	
3-25		1/1	601	
4-25		1/1	601	
5-25		1/1	601	
6-25		1/1	601	
7-25		1/1	601	
8-25		1/1	601	
9-25		1/1	601	
10-25		1/1	601	
11-25		1/1	601	
12-25		1/1	601	
13-25		1/1	601	
14-25		1/1	601	
15-25		1/1	601	
16-25		1/1	601	
17-25		1/1	601	
18-25		1/1	601	
19-25		1/1	601	
20-25		1/1	601	
21-25		1/1	601	
22-25		1/1	601	
23-25		1/1	601	
24-25		1/1	601	
25-25		1/1	601	

AB INSTRUCTIONS: Laboratory reports should reference and be billed by site ID# and contain the following:

- (1) summary of analytical methodology and QA work (blanks, spikes, duplicates)
- (2) dates for (a) sampling, (b) lab receipt, (c) extraction, (d) injection/analysis
- (3) detection limits for all constituents analyzed for and reporting of all constituents detected which were not specifically designated
- (4) \_\_\_\_\_
- (5) \_\_\_\_\_

White - Sampler

Canary - J. H. Kleinfelder & Associates

Pink - Lab Courtesy Copy

JHKA Form M-60

# CHAIN OF CUSTODY RECORD

SAMPLERS: (Signature)

## SHIPPING INFORMATION

Phone:

SHIP TO:

Shipper

Address

Date Shipped

Shipment Service

Airbill No.

Cooler No.

ATTENTION:

Phone No.

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Receive for laboratory by: (Signature)

Date/Time

\*Analysis laboratory should complete "sample condition upon receipt" section below. sign and return top copy to J. H. KLEINFELDER & ASSOCIATES, 15303 Ventura Blvd., Suite 700, Sherman Oaks, CA 91403-3156.

Sample Number	Site Identification	Date Sampled	Analysis Requested	Sample Condition Upon Receipt
1-5	417-1	1-1	1-1	
1-11				
1-15				
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
1-23				
1-24				
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1-99				
1-100				

INSTRUCTIONS: Laboratory reports should reference and be billed by site 104 and contain the following:

- summary of analytical methodology and QA work (blanks, spikes, duplicates)
- dates for (a) sampling, (b) lab receipt, (c) extraction, (d) injection/analysis
- detection limits for all constituents analyzed for and reporting of all constituents detected which were not specifically designated

White - Sampler

Canary - J. H. Kleinfelder & Associates

Pink - Lab Courtesy Copy

JHK&A Form M-50 12/78

# CHAIN OF CUSTODY RECORD

SAMPLERS: (Signature)

## SHIPPING INFORMATION

one: \_\_\_\_\_  
 SHIP TO: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 ATTENTION: \_\_\_\_\_  
 Phone No. \_\_\_\_\_

Shipper: John J. S. S. S. S.  
 Address: 1111 1st St.  
 Date Shipped: 11/1/85  
 Shipment Service: \_\_\_\_\_  
 Airbill No.: \_\_\_\_\_  
 Cooler No.: \_\_\_\_\_

Relinquished by: (Signature)	Received by: (Signature)	Date/Time
<u>[Signature]</u>	<u>[Signature]</u>	<u>11/1/85 11:25</u>
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
_____	<u>V</u>	_____
Relinquished by: (Signature)	Received by: (Signature)	Date/Time
_____	_____	_____
Relinquished by: (Signature)	Receive for laboratory by: (Signature)	Date/Time
_____	_____	_____

\*Analysis laboratory should complete "sample condition upon receipt" section below, sign and return top copy to  
 J. H. KLEINFELDER & ASSOCIATES, 15303 Ventura Blvd., Suite 700, Sherman Oaks, CA 91403-3156.

Sample Number	Site Identification	Date Sampled	Analysis Requested	Sample Condition Upon Receipt
<u>1-1</u>	<u>1-1</u>	<u>11/1/85</u>	<u>1-1</u>	_____
<u>1-2</u>	_____	_____	_____	_____
<u>1-3</u>	_____	_____	_____	_____
<u>1-4</u>	_____	_____	_____	_____
<u>1-5</u>	_____	_____	_____	_____
<u>1-6</u>	_____	_____	_____	_____
<u>1-7</u>	_____	_____	_____	_____
<u>1-8</u>	_____	_____	_____	_____
<u>1-9</u>	_____	_____	_____	_____
<u>1-10</u>	_____	_____	_____	_____
<u>1-11</u>	_____	_____	_____	_____
<u>1-12</u>	_____	_____	_____	_____
<u>1-13</u>	_____	_____	_____	_____
<u>1-14</u>	_____	_____	_____	_____
<u>1-15</u>	_____	_____	_____	_____
<u>1-16</u>	_____	_____	_____	_____
<u>1-17</u>	_____	_____	_____	_____
<u>1-18</u>	_____	_____	_____	_____
<u>1-19</u>	_____	_____	_____	_____
<u>1-20</u>	_____	_____	_____	_____

INSTRUCTIONS: Laboratory reports should reference and be billed by site ID# and contain the following:

- summary of analytical methodology and QA work (blanks, spikes, duplicates)
- dates for (a) sampling, (b) lab receipt, (c) extraction, (d) injection/analysis
- detection limits for all constituents analyzed for and reporting of all constituents detected which were not specifically designated

(4) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# CHAIN OF CUSTODY RECORD

SAMPLERS: (Signature)

## SHIPPING INFORMATION

Phone:

SHIP TO:

Shipper

Address

Date Shipped

Shipment Service

Airbill No.

Cooler No.

ATTENTION:

Phone No.

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Receive for laboratory by: (Signature)

Date/Time

\*Analysis laboratory should complete "sample condition upon receipt", section below, sign and return top copy to J. H. KLEINFELDER & ASSOCIATES, 15303 Ventura Blvd., Suite 700, Sherman Oaks, CA 91403-3156.

Sample  
Number

Site  
Identification

Date  
Sampled

Analysis  
Requested

Sample Condition  
Upon Receipt

LAB INSTRUCTIONS: Laboratory reports should reference and be billed by site ID# and contain the following:

- summary of analytical methodology and QA work (blanks, spikes, duplicates)
- dates for (a) sampling, (b) lab receipt, (c) extraction, (d) injection/analysis
- detection limits for all constituents analyzed for and reporting of all constituents detected which were not specifically designated

White - Sampler

Canary - J. H. Kleinfelder & Associates

Pink - Lab Courtesy Copy

JHK&A Form M450

# CHAIN OF CUSTODY RECORD

SAMPLERS: (Signature)

*Mark E. H. H.*

Phone: *212 628 7344*

SHIP TO:

*City of New York  
100 South Street  
New York, NY 10038*

ATTENTION: *Mr. J. H. Kleinfelder*

Phone No. *212-741-7411*

## SHIPPING INFORMATION

Shipper *T. H. H. H.*

Address *100 South Street*

Date Shipped *1/2/85*

Shipment Service *Express*

Airbill No. *1111*

Cooler No. *1111*

Relinquished by: (Signature)

*Mark E. H. H.*

Received by: (Signature)

*John H. H. H.*

Date/Time

*1/2/85 4:35 PM*

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Received by: (Signature)

Date/Time

Relinquished by: (Signature)

Receive for laboratory by: (Signature)

Date/Time

\*Analysis laboratory should complete, "sample condition upon receipt", section below, sign and return top copy to J. H. KLEINFELDER & ASSOCIATES, 15303 Ventura Blvd., Suite 700, Sherman Oaks, CA 91403-3156.

Sample Number

Site Identification

Date Sampled

Analysis Requested

Sample Condition Upon Receipt

*100-100*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-101*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-102*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-103*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-104*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-105*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-106*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-107*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-108*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-109*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-110*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-111*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-112*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-113*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-114*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-115*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-116*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-117*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-118*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-119*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-120*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-121*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-122*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-123*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-124*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

*100-125*

*C 73-1*

*1/2/85*

*Lead, Cadmium, Copper, Nickel, Zinc, Manganese, Barium, Strontium, Vanadium, Chromium, Molybdenum, Selenium, Tellurium, Iodine, Bromine, Fluorine, Chlorine, Sulfur, Phosphorus, Nitrogen, Carbon, Hydrogen, Oxygen*

*115*

White - Sampler

Canary - J. H. Kleinfelder & Associates

Pink - Lab Courtesy Copy

JHK&A Form M-60



LABORATORY CERTIFICATE



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

- Gooch Laboratories Division -

1250 S. Boyle Ave., Los Angeles, CA 90023. Ph. (213) 269-7421

Laboratory No. G85p94  
Preliminary No. 6196 Subs 5-8

Reported 12-17-85  
Sampled  
Received 11-18-85

For J. H. KLEINFELDER & ASSOCIATES

Report on Soil

Mark " Site Identification: Q1073-1 "

Based on submitted samples.

<u>Prelim. No.</u>	<u>Sample No.</u>
6196-5	B3-05
6196-6	B4-05
6196-7	B5-05
6196-8	B6-05

San Francisco

Wilmington

Los Angeles

G85p94

Prel. No. 6196 Subs 5-8

-2-

December 17, 1985

<u>Prel. No.</u>	<u>6196-5</u>	<u>6196-6</u>	<u>6196-7</u>	<u>6196-8</u>	<u>LOD</u>
pH	7.60	8.66	7.49	7.29	N/A
Phosphate	0.02%	0.03%	0.03%	0.03%	N/A
Chloride	ND	ND	ND	ND	50 ppm
Ammonia	ND	ND	ND	ND	50 ppm

LOD = Limit of Detection.



G85p94

Prel. No. 6196 Subs 5-8

-3-

December 17, 1985

<u>Prel. No.</u>	<u>6196-5</u>	<u>6196-6</u>	<u>6196-7</u>	<u>6196-8</u>	<u>LOD (mg/L)</u>
Antimony, mg/L	< 0.05	< 0.05	< 0.05	< 0.05	0.05
Arsenic, mg/L	0.065	0.061	0.046	0.033	0.01
Beryllium, mg/L	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Cadmium, mg/L	< 0.012	< 0.012	< 0.012	< 0.012	0.012
Chromium, mg/L	0.10	0.30	0.05	0.10	0.03
Copper, mg/L	0.10	0.32	1.6	2.1	0.02
Lead, mg/L	< 0.15	< 0.15	< 0.15	< 0.15	0.15
Nickel, mg/L	0.30	0.22	0.30	0.35	0.03
Mercury, mg/L	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Selenium, mg/L	< 0.02	< 0.02	< 0.02	< 0.02	0.02
Silver, mg/L	< 0.02	< 0.02	0.04	< 0.02	0.02
Thallium, mg/L	< 0.01	< 0.01	< 0.01	< 0.01	0.01
Zinc, mg/L	< 0.10	0.30	1.0	1.2	0.10
Vanadium, mg/L	0.95	0.72	1.3	1.0	0.32
Molybdenum, mg/L	0.37	0.15	0.21	0.21	0.15
Cobalt, mg/L	0.40	0.70	0.64	0.70	0.05
Barium, mg/L	8.9	7.1	13	12	0.30

LABORATORY CERTIFICATE



Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878

- Gooch Laboratories Division -

1250 S. Boyle Ave., Los Angeles, CA 90023. Ph. (213) 269-7421

Laboratory No. G85p94  
Preliminary No. 6196 Subs 1-4

Reported 12-17-85  
Sampled  
Received 11-18-85

For J. H. KLEINFELDER & ASSOCIATES

Report on Soil

Mark " Site Identification: Q1073-1 "

Based on submitted samples.

<u>Prelim. No.</u>	<u>Sample No.</u>
6196-1	03-15
6196-2	03-40
6196-3	B1-05
6196-4	B2-05

G85p94

Prel. No. 6196 Subs 1-4

-3-

December 17, 1985



Curtis &amp; Tompkins, Ltd.

<u>Prel. No.</u>	<u>6196-1</u>	<u>6196-2</u>	<u>6196-3</u>	<u>6196-4</u>	<u>LOD (mg/L)</u>
Antimony, mg/L	<0.05	<0.05	<0.05	<0.05	0.05
Arsenic, mg/L	0.056	0.066	0.084	0.036	0.01
Beryllium, mg/L	<0.01	<0.01	<0.01	<0.01	0.01
Cadmium, mg/L	<0.012	<0.012	<0.012	<0.012	0.012
Chromium, mg/L	<0.03	0.10	2.7	0.22	0.03
Copper, mg/L	1.7	<0.02	0.4	0.22	0.02
Lead, mg/L	0.30	<0.15	0.20	<0.15	0.15
Nickel, mg/L	<0.03	0.15	0.30	0.40	0.03
Mercury, mg/L	<0.01	<0.01	0.03	<0.01	0.01
Selenium, mg/L	<0.02	<0.02	<0.02	<0.02	0.02
Silver, mg/L	<0.02	<0.02	<0.02	<0.02	0.02
Thallium, mg/L	<0.01	<0.01	<0.01	<0.01	0.01
Zinc, mg/L	0.90	<0.10	0.30	<0.10	0.10
Vanadium, mg/L	<0.32	0.60	1.3	1.5	0.32
Molybdenum, mg/L	<0.15	0.23	0.22	0.21	0.15
Cobalt, mg/L	0.07	0.09	0.58	0.91	0.05
Barium, mg/L	3.0	7.7	15	15	0.30

LOD = Limit of Detection, specified in right hand column.



Lab. No. G85p94  
Prel. No. 6196 Subs 1-4

-2-

December 17, 1985

<u>Prel. No.</u>	<u>6196-1</u>	<u>6196-2</u>	<u>6196-3</u>	<u>6196-4</u>	<u>LOD</u>
pH	7.49	8.59	6.49	7.45	N/A
Phosphate	0.07%	0.02%	0.03%	0.13%	N/A
Chloride	ND	ND	300 ppm	ND	50 ppm
Ammonia	ND	ND	ND	ND	50 ppm

LOD = Limit of Detection.



## LABORATORY CERTIFICATE

Curtis &amp; Tompkins, Ltd., Analytical Laboratories, Since 1878

- Gooch Laboratories Division -

1250 S. Boyle Ave., Los Angeles, CA 90023, Ph. (213) 269-7421

Laboratory No. G85p95  
Preliminary No. 6230 Subs 1-6

Reported 12-17-85  
Sampled  
Received 11-21-85

For J. H. KLEINFELDER & ASSOCIATES

Report on Water

Mark " Site Identification: Q1073-1,  
Sampled: 11/21/85 "

Based on submitted samples.

<u>Prelim. No.</u>	<u>Sample No.</u>
6230-1	W-00-00
6230-2	W-01-01
6230-3	W-02-02
6230-4	W-00-03
6230-5	W-03-04
6230-6	W-03-05



G85p95

Prel. No. 6230 Subs 1-6

-3-

December 17, 1985

<u>Prel. No.</u>	<u>6230-1</u>	<u>6230-2</u>	<u>6230-3</u>	<u>6230-4</u>	<u>6230-5</u>	<u>LOD (mg/L)</u>
------------------	---------------	---------------	---------------	---------------	---------------	-------------------

EP TOXICITY  
INORGANICS

Arsenic, mg/L	ND	ND	ND	ND	ND	0.01
Selenium, mg/L	ND	ND	ND	ND	ND	0.01
Mercury, mg/L	ND	ND	ND	ND	ND	*
Silver, mg/L	ND	ND	ND	ND	ND	0.01
Barium, mg/L	ND	ND	0.36	ND	ND	0.30
Cadmium, mg/L	ND	ND	ND	ND	ND	0.01
Chromium, mg/L	0.02	ND	ND	ND	ND	0.01
Lead, mg/L	ND	ND	ND	ND	ND	0.06
Flourine, mg/L	ND	0.36	0.34	ND	0.31	0.1
Nitrate-Nitrogen	2.0	27.0	25.2	2.3	4.1	0.1

\*LOD (mg/L) = 0.1 for Subs 1, 2 & 3  
= 0.001 for Subs 4 & 5

ND = None Detected.

LOD = Limit of Detection, specified in right hand column.



Lab. No. G85995  
Prel. No. 6230 Subs 1-6

-4-

 Curtis & Tompkins, Ltd  
December 17, 1985

<u>Prel. No.</u>	<u>6230-1</u>	<u>6230-2</u>	<u>6230-3</u>	<u>6230-4</u>	<u>6230-5</u>	<u>LOD</u>
<u>GENERAL MINERALS</u>						
Calcium, mg/L	1.2	145	130	1.4	130	0.1
Copper, mg/L	ND	ND	ND	ND	ND	0.1
Iron, mg/L	ND	ND	ND	ND	0.3	0.2
Magnesium, mg/L	ND	38	33	ND	36	0.1
Manganese, mg/L	ND	0.7	0.6	ND	1.8	0.2
Sodium, mg/L	3.0	108	115	4.1	123	0.1
Zinc, mg/L	ND	0.5	0.4	ND	0.5	0.1
Total Alkalinity to pH 4.6, mg CaCO <sub>3</sub> /L	2.5	405	375	2.5	510	N/A
Fluoride, mg/L	ND	0.36	0.34	ND	0.31	0.1
Nitrate Nitrogen, mg/L	2.0	27.0	25.2	2.3	4.1	0.5
Chloride, mg/L	240	120	120	30	150	10
Surfactants, ug/L	70	70	50	ND	55	10
pH	8.04	7.27	7.31	8.26	7.04	N/A
Conductivity, mhos/cm	<10	1,300	1,200	<10	1,300	N/A
Sulfate, mg/L	ND	412	458	ND	386	1.0
Total Dissolved Solids, mg/L	295	1,325	1,135	120	1,175	5
Hardness, mg CaCO <sub>3</sub> /L	3	518	461	3.5	473	1
Phosphate, mg/L	7.7	11.3	14.4	ND	12.0	3

ND = None Detected

LOD =Limit of Detection is specified in right hand column.



Lab. No. G85p95

Prel. No. 6230 Subs 1-6

-5-

December 17, 1985

Prel. No. 6230-6EPA 601  
Purgeable Halocarbons

	<u>ug/L</u>	<u>LOD</u>
methylene chloride	14	5
trichlorofluoromethane	ND	1
1,1-dichloroethene	34	1
1,1-dichloroethane	5	1
trans-1,2-dichloroethene	ND	1
chloroform	3	1
1,1,2-trichloro-2,2,1-trifluoroethane	ND	1
1,3-dichloroethane	ND	1
1,1,1-trichloroethane	8	1
carbon tetrachloride	ND	1
bromodichloromethane	ND	1
1,2-dichloropropane	3	1
trans-1,3-dichloropropene	ND	1
trichloroethene	90	1
dibromochloromethane	ND	1
1,1,2-trichloroethane	ND	1
cis-1,3-dichloropropene	ND	1
bromoform	ND	1
1,1,2,2-tetrachloroethane	8	1
tetrachloroethene	9	1
chlorobenzene	ND	1

ND = None Detected. Limit of detection (LOD) in last column.

LABORATORY CERTIFICATE



Curtis & Tompkins, Ltd., Analytical Laboratories Since 1878

290 Division Street San Francisco CA 94103 Phone (415) 861 1863

Laboratory No. 10641  
Preliminary No.

Reported 1/14/86  
Sampled  
Received 11/19/85

For KLEINFELDER & ASSOCIATES

Report on 4 Samples of Soil

Mark  
1) 02-15  
2) 02-40  
3) 01-15  
4) 01-40

SEE ATTACHED FOR RESULTS

San Francisco

Wilmington

Los Angeles



CLIENT: Klienfelder & Associates  
LABORATORY NUMBER: 10641

DATE: January 14, 1986  
PAGE: 2

	Sample 1 02-15	Sample 2 02-40	Sample 3 01-15	Sample 4 01-40
Antimony, mg/L	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03)
Arsenic, mg/L	0.17	ND(0.01)	0.025	0.27
Beryllium, mg/L	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Cadmium, mg/L	ND(0.01)	0.02	ND(0.01)	ND(0.01)
Chromium, mg/L	2.9	ND(0.01)	ND(0.01)	ND(0.01)
Copper, mg/L	2.3	1.0	1.8	1.2
Lead, mg/L	ND(0.04)	0.15	0.06	0.05
Mercury, mg/L	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Nickel, mg/L	0.07	0.16	0.09	0.05
Silver, mg/L	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Selenium, mg/L	ND(0.04)	ND(0.04)	ND(0.04)	ND(0.04)
Thallium, mg/L	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)
Zinc, mg/L	3.1	1.8	2.2	0.47
Vanadium, mg/L	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
Cobalt, mg/L	0.10	0.54	0.11	0.14
Molybdenum, mg/L	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Barium, mg/L	2.5	9.0	3.7	4.0

ND = None detected. Limit of detection is indicated in parentheses.

LABORATORY CERTIFICATE



Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878

- Gooch Laboratories Division -

1250 S. Boyle Ave., Los Angeles, CA 90023. Ph. (213) 269-7421

Laboratory No. G85p136  
Preliminary No. 6176 Subs 3, 7, 12 & 16

Reported 12-23-85  
Sampled  
Received 11-13-85

For J. H. KLEINFELDER & ASSOCIATES

Report on Soil

Mark " Site Identification: Q1073-1 "

Based on submitted samples.

<u>Prel. No.</u>	<u>Sample No.</u>	<u>Date Sampled</u>
6176-3	02-15	11/12/85
6176-7	02-40	11/12/85
6176-12	01-15	11/13/85
6176-16	01-40	11/13/85

Lab. No. G85p136  
Prel. No. 6176 Subs 3,  
4, 12, & 16

-2-



December 23, 1985

<u>Prel. No.</u>	<u>pH</u>	<u>Phosphate</u>
6176-3	6.9	842 mg/kg
6176-7	7.6	1,303 mg/kg
6176-12	6.8	777 mg/kg
6176-16	7.6	677 mg/kg



CLIENT: J. H. KLEINFELDER & ASSOCIATES  
PROJECT NUMBER: Q1073-1  
DATE: 11/15/85

LABORATORY NUMBER: G85p136  
PRELIMINARY NUMBER 6176-3

EPA METHOD 624 (EXPANDED)  
VOLATILE ORGANICS \*

Client ID: 02-15

COMPOUND

Detection  
Limit  
ug/Kg

benzene	ND	(500)
carbon tetrachloride	ND	(100)
chlorobenzene	ND	(100)
1,2-dichloroethane	ND	(100)
1,1,1-trichloroethane	ND	(100)
1,1-dichloroethane	ND	(100)
1,1,2-trichloroethane	ND	(100)
1,1,2,2-tetrachloroethane	ND	(100)
chloroethane	ND	(100)
2-chloroethylvinyl ether	ND	(100)
chloroform	ND	(100)
1,1-dichloroethene	ND	(100)
1,2-trans-dichloroethene	ND	(100)
1,2-dichloropropane	ND	(100)
1,3-dichloropropylene	ND	(100)
ethylbenzene	ND	(100)
methylene chloride	ND	(100)
chloromethane	ND	(100)
bromomethane	ND	(100)
bromoform	ND	(100)
bromodichloromethane	ND	(100)
fluorotrichloromethane	ND	(100)
dichlorodifluoromethane	ND	(100)
chlorodibromomethane	ND	(100)
tetrachloroethene	ND	(100)
toluene	ND	(100)
trichloroethene	ND	(100)
vinyl chloride	ND	(100)

Non-Priority Hazardous Pollutant Substances List Compound

acetone	ND	(500)
2-butanone	ND	(500)
carbon disulfide	ND	(200)
2-hexanone	ND	(500)
4-methyl-2-pentanone	ND	(500)
styrene	ND	(200)
vinyl acetate	ND	(1000)
total xylenes	ND	(200)

ND = Not detected. Limit of detection appears in parentheses.

\*Methanol Extract.



CLIENT: J. H. KLEINFELDER & ASSOCIATES  
 PROJECT NUMBER: Q1073-1  
 DATE: 11/15/85

LABORATORY NUMBER: G85p136  
 PRELIMINARY NUMBER 6176-7

EPA METHOD 624 (EXPANDED)  
 VOLATILE ORGANICS \*

Client ID: 02-40

COMPOUND	Detection Limit ug/Kg
benzene	ND (500)
carbon tetrachloride	ND (100)
chlorobenzene	ND (100)
1,2-dichloroethane	ND (100)
1,1,1-trichloroethane	ND (100)
1,1-dichloroethane	ND (100)
1,1,2-trichloroethane	ND (100)
1,1,2,2-tetrachloroethane	ND (100)
chloroethane	ND (100)
2-chloroethylvinyl ether	ND (100)
chloroform	ND (100)
1,1-dichloroethene	ND (100)
1,2-trans-dichloroethene	ND (100)
1,2-dichloropropane	ND (100)
1,3-dichloropropylene	ND (100)
ethylbenzene	ND (100)
methylene chloride	ND (100)
chloromethane	ND (100)
bromomethane	ND (100)
bromoform	ND (100)
bromodichloromethane	ND (100)
fluorotrichloromethane	ND (100)
dichlorodifluoromethane	ND (100)
chlorodibromomethane	ND (100)
tetrachloroethene	ND (100)
toluene	ND (100)
trichloroethene	ND (100)
vinyl chloride	ND (100)

Non-Priority Hazardous Pollutant Substances List Compound

acetone	ND (500)
2-butanone	ND (500)
carbon disulfide	ND (200)
2-hexanone	ND (500)
4-methyl-2-pentanone	ND (500)
styrene	ND (200)
vinyl acetate	ND (1000)
total xylenes	ND (200)

ND = Not detected. Limit of detection appears in parentheses.

\*Methanol Extract.